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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

HOUGE 37-4-33

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on March 12, 2008Signature /Karen Vertz/Typed or printed name Karen Vertz

Application Number

10/505,197

Filed

June 10, 2005

First Named Inventor

Erik Houge

Art Unit

1792

Examiner

Robert M. Kunemund

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record. 58,076
Registration number

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____



Signature

Steven J. Hanke

Typed or printed name

972-480-8800

Telephone number

March 12, 2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Erik C. Houge, *et al.*
Serial No.: 10/505,197
Filed: June 10, 2005
Title: MONITORING AND CONTROL OF A FABRICATION PROCESS
Grp./A.U.: 1792
Examiner: Robert M. Kunemund Confirmation No.: 3716

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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March 12, 2008 (Date)

Karen Vertz

(Printed or typed name of person signing the certificate)

/Karen Vertz/

(Signature of the person signing the certificate)

Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

The Appellants have carefully considered this application in connection with the Examiner's Final Rejection electronically delivered March 7, 2008, and respectfully request a pre-appeal brief review of this application in view of the following remarks.

REMARKS/ARGUMENTS

The Appellants originally submitted Claims 1-21 in the application. Previously, the Appellants amended independent Claims 1 and 11. Accordingly, Claims 1-21 are currently pending in the application.

I. Rejection of Claims 1-21 under 35 U.S.C. §103

The Examiner has rejected Claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,463,977 to Manada, *et al.* ("Manada") in view of U.S. Patent No. 5,466,934 to Adams, *et al.* ("Adams"). The Appellants respectfully disagree with the Examiner's rejection since modifying Manada with Adams renders Manada unsatisfactory for its intended purpose.

In the Final Rejection of December 12, 2007, the Examiner asserts that Manada teaches a subsystem that analyzes crystallographic measurements of a material but that Manada differs from the instant claims in the crystallographic measurements of the material. To cure this deficiency of Manada, the Examiner cites Adams to teach measuring crystallographic properties that Manada does not teach. (*See* Final Rejection of December 12, 2007, pages 2-3.) Manada teaches a method of and an apparatus for epitaxially growing a uniform chemical compound crystal without any defects induced from emission of a high energy electron beam to the surface of the crystal that a conventional reflection high-energy electron diffraction (RHEED) system would create. Additionally, Manada teaches that it is necessary to align a direction of a crystal axis and a direction of the high-energy electron beam with each other in a conventional RHEED system. As such, in a conventional RHEED system, it is impossible to grow a crystal while rotating the crystal substrate.

(See, for example, column 1, lines 50-55, and column 2, lines 58-62 of Manada.) Manada overcomes the problems associated with the high-energy electron beam of a conventional RHEED system and the related issue of aligning the beam with the direction of a crystal axis by reflecting a light from a light source 1, rather than a high-energy electron beam, off of growing film of a GaAs substrate to help determine the thickness of the growth of an epitaxial layer on a crystal substrate. (See, for example, column 4, lines 17-19 and Figures 1-3 of Manada.) Thus, Manada explicitly teaches to avoid using an electron beam to measure epitaxial thickness so as to prevent introducing defects into a crystalline material and to allow epitaxial crystal growth through rotation of a crystal substrate.

Adams teaches measuring crystallographic information, specifically identifying crystallographic defects, with an imaging apparatus 10 which incorporates a conventional scanning electron microscope (SEM) 12. SEM 12 includes a SEM control unit 14 coupled to an electron beam generator 16 to direct the electron beam generator 16 to discharge a focused electron beam 18 which bombards a material sample 24. (See, for example, column 2, line 66 through column 3, line 8 and Figure 1 of Adams.) Thus, Adams teaches using an electron beam to measure crystallographic defects in a material sample. The Examiner states it would have been obvious to one of ordinary skill in the art to modify Manada by the teachings of Adams to measure more than thickness. (See Final Rejection of December 12, 2007, page 3.) However, modifying Manada with Adams to measure more than crystal thickness, as the Examiner cites, would render Manada unsatisfactory for its intended purpose since Manada explicitly teaches that the use of an electron beam induces defects

in the crystal and does not allow for rotating a crystal substrate to grow an epitaxial layer on it, which Manada is directed to.

MPEP §2143.01 states that "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). As such, the cited combination of Manada and Adams, as applied by the Examiner, does not establish a *prima facie* case of obviousness of independent Claims 1 and 11 and Claims that depend thereon. Accordingly, the Appellants respectfully request the Review Panel to remove the rejection of Claims 1-21 and allow issuance thereof.

II. Conclusion

In view of the foregoing remarks, the Appellants see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-21.

The Appellants request the Reviewers to telephone the undersigned agent of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

HITT GAINES, PC

A handwritten signature in black ink that reads "Steven J. Hanke". The signature is written in a cursive, flowing style.

Steven J. Hanke
Registration No. 58,076

Dated: March 12, 2008

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